

ESCOLA SUPERIOR DE AGRICULTURA “LUIZ DE QUEIROZ”
UNIVERSIDADE DE SÃO PAULO
DEPARTAMENTO DE CIÊNCIAS EXATAS
LCE0130 - CÁLCULO DIFERENCIAL E INTEGRAL

RESPOSTAS - LISTA DERIVADAS (AULA 7)

1) $f'(x) = 6x^5$

2) $f'(x) = 4x + 1$

3) $f'(x) = 9x^2 + 10x - 1$

4) $f'(x) = 3x^2$

5) $f'(x) = 4x^3$

6) $f'(x) = -x^2$

7) $f'(x) = 2x + 4x^3 + 6x^5$

8) $f'(x) = 2x + 2 - \frac{1}{2}x^{-1/2}$

9) $f'(x) = 2(3x + 4) + (2x - 1)3 = 12x + 5$

10) $f'(x) = (3x^2 - 2x)(x^4 + 4) + (x^3 - x^2)4x^3 = 7x^6 - 6x^5 + 12x^2 - 8x$

11) $f'(x) = (5x^4 - 6x^2)(1 + x^2) + (x^5 - 2x^3)(2x) = 7x^6 - 5x^4 - 6x^2$

12) $f'(x) = (x^3 + 4) + x(3x^2) = 4x^3 + 4$

13) $f'(x) = \frac{2x - (2x + 3)}{x^2} = \frac{-3}{x^2}$

14) $f'(x) = \frac{2x^4 - (x^2 - 2)3x^2}{x^6} = \frac{-x^4 + 6x^2}{x^6}$

15) $f'(x) = \frac{(2x - 2)x^{1/2} - (x^2 - 2x)\frac{1}{2}x^{-1/2}}{x} = \frac{\frac{3}{2}x^{3/2} + x^{1/2}}{x}$

16) $f'(x) = \left[\frac{2(x + 5) - (2x + 1)}{(x + 5)^2} \right] (3x - 1) + \left[\frac{2x + 1}{x + 5} \right] 3 = \frac{6x^2 + 60x + 6}{(x + 5)^2}$

17) $f'(x) = \frac{6x^2(x^2 - 4x + 1) - (2x^3 + 4)(2x - 4)}{(x^2 - 4x + 1)^2} = \frac{2x^4 - 16x^3 + 6x^2 - 8x + 16}{(x^2 - 4x + 1)^2}$